Claims

[c1]   1. A lock management apparatus comprising:

means for receiving from a processor associated with said lock management apparatus an indicator of a resource to be locked;

means for causing a corresponding indicator to be stored;

means for causing said stored indicator to be deleted when an associated resource is unlocked;

means for receiving from a network a frame indicative of a lock request for a resource;

means, responsive to receiving a lock request frame originating from another processor, for checking any stored indicators for a matching locked resource;

means, responsive to detecting a match, for transmitting a frame indicative of said resource being locked by said processor to the originator of said lock request; and

means, responsive to not detecting a match, for transmitting said lock request frame to the originator of said lock request.

[c2]   2. The apparatus of claim 1 further comprising:

means for receiving from said processor associated with said lock management apparatus a provisional indicator of a resource to be locked; and

wherein said storing means stores an indicator corresponding to said provisional indicator.

[c3]   3. The apparatus of claim 1 further comprising:

means for receiving from said processor associated with said lock management apparatus a check to determine if a resource is locked by said processor; and

means for indicating to said associated processor if said resource is locked.

[c4]   4. The apparatus of claim 1 wherein the associated processor controls a network server in one of a redundant pair of servers.

[c5]   5. The apparatus of claim 4 further comprising:

means for receiving from the network a frame from the other of said pair of redundant servers including an indicator of a resource to be locked;

means for causing a corresponding indicator to be stored; and

[c6]   6. The apparatus as claimed in claim 1 wherein the apparatus comprises one of a separate component of a server motherboard or an integral element of a server motherboard.

[c7]   7. The apparatus as claimed in claim 1 wherein said indicators are stored in a content addressable memory (CAM).

[c8]   8. The apparatus as claimed in claim 7 wherein said network is a fibre channel arbitrated loop (FC-AL).

[c9]   9. The apparatus as claimed in claim 8 wherein said transmitting means are adapted to transmit frames to the originator of a lock request via any nodes in said loop between said lock management apparatus and said originator.

[c10]   10. The apparatus as claimed in claim 9 wherein said originator is one of another server or another lock management apparatus associated with another server.

[c11]   11. The apparatus as claimed in claim 10 wherein said CAM is associated with a pair of lock management apparatus, each of which is adapted to receive and transmit frames on a respective one of two redundant loops comprising said FC-AL.

[c12]

12. A method for managing locks comprising:
receiving from an associated processor an indicator of a resource to be locked;
causing a corresponding indicator to be stored;
causing said stored indicator to be deleted when an associated resource is unlocked;
receiving from a network a frame indicative of a lock request for a resource;
responsive to receiving a lock request frame originating from another processor, checking any stored indicators for a matching locked resource;
responsive to detecting a match, transmitting a frame indicative of said resource being locked by said processor to the originator of said lock request;

and

responsive to not detecting a match, transmitting said lock request frame to the originator of said lock request.